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AUG 20 2003
PATENT & TRADEMARK OFFICE

REMARKS

Below, the applicant's comments are preceded by related remarks of the examiner set forth in small bold font.

> **3. Claims 1, 10, 17, 18, 22, and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. These claims recite the limitation "maintaining a database indicating total resource usage in the network system" which is not discussed or disclosed in the specification. Applicant is requested to direct the Office as to where in the specification the aforementioned limitation is discussed.**

The applicant has amended the claims to delete the limitation "maintaining a database."

> **5. Claims 1, 10, 14, 17, 18, 22, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**
> **6. The claims 1, 10, 17, 18, 22, and 24 recite the limitation, "maintaining a database indicating total resource usage in the network system ". It is undeterminable from the scope of the claim if "total resource usage" indicates the usage on all the resources currently on the network or the amount of usage on one resource by all the processes currently using the resource. Correction is required.**

The applicant has amended claim 1 to recite "indicating a value representing a total amount of usage of the resource by at least two processes." This makes clear that the total amount refers to the usage of one resource by at least two processes. Claims 10, 14, 17, 18, 22, and 24 have been amended similarly.

> **7. Claim 14 recites the limitation "... to at least correspond to the specified usage level." It is unable to be determined from the scope of the claim as to what this means (i.e., how close is does the maximum usage level have to be to be considered that it corresponds to the specified usage level). Correction is required.**

The applicant has amended claim 14 to recite "incrementing the maximum usage level to be equal to or more than a usage level requested by the device."

> **8. ... Claims 1, 4, 5, 8-10, 17-18, and 21-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Lowe (USPN 6,125,396).**

9. Referring to claim 1, Lowe discloses a method of managing usage of a resource (i.e., access rates to a shared file server) in a network system, the network system comprising:

maintaining a database indicating total resource usage in the network system (it is inherent that the system taught by Lowe maintains some form of memory that stores the amount of resource usage in the system by the statement "based on current usage of shared resource 428 by other clients ..." col. 7, lines 15-16);

indicating an available amount of credit (usage reserve) for usage of a resource based on said total resource usage (e.g., abstract; Figure 3, reference character 324; col. 5);

decreasing said total resource usage according to a function of time (since Lowe discloses that the process repeats in intervals, such as per second, it inherently decreases the total resource usage based on a function of time) (col. 5, line 55-62; col. 7, line 39 to col. 8, line 45)

regulating usage of the resource by a process based on the indicated available credit and allowing increased usage of the resource by the process based on said decreasing (the example taught by Lowe discloses that at the one second interval the desired usage rate is 10 blocks/second, the second time interval is 7 blocks/second, third time interval is 7 blocks/second, fourth time interval is 12 blocks/second) (Figure 4; col. 5, line 55-62; col. 7, line 39 to col. 8, line 45).

The applicant submits that Lowe does not disclose or suggest decreasing a value "according to a predetermined function of time," where the value represents a "total amount of usage of the resource by at least two processes," and "allowing increased usage of the resource by the at least two processes based on said decreasing," as recited in amended claim 1.

An example of a method for managing usage of a resource in a network system is to use a "leaky bucket" model in which a leaky bucket is used to control usage of a resource by at least two processes (or devices) connected to the network. A number of parameters are associated with the leaky bucket. For example, a "Fill Level" represents a total amount of usage of the resource by the at least two processes, a "maximum Fill Level" represents the maximum amount of usage of the resource by the at least two processes, and a "credit" (equal to a difference between the "maximum Fill Level" and the "Fill Level") represents the amount of resource that can be used by the at least two processes.

When a process (or device) requests usage of the resource, a value representing the requested amount of resource usage is added to the Fill Level. If the Fill Level can be incremented without the bucket overflowing, use of the resource for the requested amount is granted. If the bucket overflows, use of the resource is not granted, and the request is placed in a queue. The Fill Level is decreased according to the predetermined function of time, such as

decreasing the Fill Level by a value "c" every "t" milliseconds. The value c represents an estimate of the amount of resource that is freed up and can be allocated for use every t milliseconds. When the Fill Level is decreased by the amount c, the credit value is recalculated to see if a request in the queue can be fulfilled. The request is granted when the credit is larger than the amount of usage specified in the request. In this way, the total amount of resource usage by the at least two processes (or devices) can be regulated as a predetermined function of time.

Although Lowe discloses a "leaky bucket" model, the leaky bucket model in Lowe is different from the leaky bucket model described in the present application. In Lowe, a bucket is associated with a client that uses a resource (col. 4, lines 17-19). For each bucket, the computer system keeps track of an "assigned rate of resource usage," an "actual rate of resource usage," and a "reserve" amount of resource (column 4, lines 30-60). None of these parameters are decreased according to a predetermined function of time. Although the total amount of resource usage by two or more clients could be inferred by computing a sum of the amounts of resource usage for each buckets (which could be inferred by multiplying the actual usage rate associated with the bucket by the period of time that the bucket has been in use), Lowe does not disclose or suggest decreasing this sum "according to a predetermined function of time" and "allowing increased usage of the resource by the at least two processes based on said decreasing." Thus, claim 1 is patentable over Lowe.

Claims 4, 5, 7-10, 17-18, and 21-24 are patentable for at least the same reasons as claim 1.

Claims 2, 3, 19, and 20 are rejected under 35 U. S. C. 103(a)as being unpatentable over Lowe in view of Overby, Jr. et al. (USPN 6,016,503)(hereinafter Overby).

Claim 6 are rejected under 35 U. S. C. 103(a)as being unpatentable over Lowe in view of Garner et al. (USPN 6,112,085)(hereinafter Garner).

Claims 11-16 are rejected under 35 U. S. C. 103(a)as being unpatentable over Lowe in view of Harrington et al. (USPN 6,289,012)(hereinafter Harrington).

Claims 2, 3, 6, 11-16, 19, and 20 are patentable for at least the same reasons as claim 1.

Enclosed is a $72 check for excess claims fee. Please apply any other charges to deposit account 06-1050, referencing attorney docket 10559-233001.

Respectfully submitted,

Date: 8/18/2003

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* See attached document certifying that Rex Huang has limited recognition to practice before the U.S. Patent and Trademark Office under 37 C.F.R. § 10.9(b).

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Expires: May 16, 2004

Harry I. Moatz
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